

### **REMARKS**

In the Office Action<sup>1</sup> mailed June 23, 2009, the Examiner rejected claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Sheppard, Jr. et al. (U.S. Patent No. 6,143,247, hereafter "Sheppard") in view of Virtanen (U.S. Publication No. 2001/0016316, hereafter "Virtanen"). Claims 4 and 5 remain pending and under consideration.

Applicant respectfully traverses the rejection of claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Sheppard in view of Virtanen.

Claim 4 recites a bioassaying apparatus, comprising, for example, "a substrate holder for holding and rotationally driving a substrate for bioassay, the substrate including a reaction region [formed on an upper layer of the substrate] and an information region [formed on a lower layer of the substrate] . . . , wherein the lower layer is spaced from the upper layer in a thickness direction by at least a depth of focus of [a] laser beam," (emphasis added). Sheppard and Virtanen, alone or combined, fail to teach or suggest at least this element.

The Examiner asserted, "[Sheppard discloses] the lower layer is spaced from the upper layer in a thickness direction by at least a depth of focus of the laser beam (upper layer and reflective lower layer are spaced apart by substrate, col. 11, lines 53-60; reflective material 15 is lower layer, upper layer 11 is reaction region and substrate 14 is the spacer in the thickness direction between the upper and lower layers, Fig. 1D;

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<sup>1</sup> The Office Action contains statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

fluorescent signal is transmitted through the substrate as seen in Fig. 5D and therefore the thickness of the substrate is a thickness that is at least a depth of the [laser beam]).” Office Action at 3 and 4. Applicant respectfully disagrees.

Sheppard, at column 11, lines 53-60, states, “[t]he platform of FIG. 1D is advantageously provided as an optical disk wherein digital information has been encoded in an standard format; however, in the platforms of the invention, the thickness of the substrate [14] is thinned sufficiently so that the presence of particles on the surface will interfere with the reading of the encoded data using the optical detection system pictured in FIG. 5E,” (emphasis added).

Accordingly, Sheppard at best discloses that substrate 14 is so thin that particles on the surface of substrate 14 *interfere* with the reading of the encoded data. For at least this reason, Sheppard, while being silent with respect to the depth of focus of light source 50, clearly suggests that the thickness of substrate 14 is *less* than a depth of focus of light source 50. Therefore, Sheppard cannot teach or suggest a combination wherein “the lower layer is spaced from the upper layer in a thickness direction by at least a depth of focus of the laser beam,” as recited in claim 4 (emphasis added).

Virtanen fails to cure these deficiencies of Sheppard. Accordingly, claim 4 is distinguishable over Sheppard and Virtanen.

Claim 5 depends from claim 4 and is thus distinguishable over Sheppard and Virtanen at least due to its dependence.

Further, Applicant calls attention to M.P.E.P. § 707.07(f), which provides, “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant’s argument and answer the substance of it.”

Applicant submits that the above arguments were presented on page 9 of the Amendment After Final filed April 1, 2009. However, the Examiner did not answer the substance of these arguments in the Office Action mailed June 23, 2009. Accordingly, any new grounds of rejection made by the Examiner in a subsequent Office Action would not have been necessitated by the present reply, and such a rejection thus may not be made final. See MPEP. § 706.07(a).

Moreover, Applicant submits that "[i]t is improper to combine references where the references teach away from their combination." M.P.E.P. § 2145, quoting *In re Grasselli*, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983). In this case, one of ordinary skill in the art would not combine Virtanen and Sheppard in the manner alleged by the Examiner, because Virtanen teaches away from Sheppard.

The Examiner asserted, "it would have been obvious to one having ordinary skill in the art at the time the invention was made to use in the device of Sheppard, Jr. et al., a first fluorescence detection optical system . . . and a second information recording/reproducing optical system . . . as taught by Virtanen, in order to write data to a disk and provide detection of an assay without the need to change laser wavelengths during use." Office Action at 5, emphasis added. Applicant respectfully disagrees.

Sheppard, at column 3, lines 40-42, states, "[p]referred embodiments of detecting means are a light source, particularly a monochromatic light source, and a detector therefor," (emphasis added), and at column 11, lines 40-42, states, "[t]he light emitted from the laser [65] is split into multiple beams (typically 2 or 3) and directed on to the disk [60]," (emphasis added). Further, Sheppard, at column 22, lines 29-32, states, "[t]he reflection of the side beams off of the reflective features are used to track the

central beam along the transparent regions of the platform, so that particulates bound there may be detected," (emphasis added), and at column 22, lines 38-41, states, "[t]he interaction of a particle with the central beam may result in fluorescence, absorption, or scattering, which may be detected by the detector 50 within the 'head' or by another detector advantageously placed (not shown)," (emphasis added).

Accordingly, Sheppard at best discloses a *single* laser 65, the beam of which is split into: (1) a central beam for fluorescence detection; and (2) side beams for tracking particles to be detected. See, for example, Figure 6A of Sheppard. Therefore, Sheppard clearly discloses that laser 65 of a *single* wavelength (monochromatic) is preferred. Sheppard does not disclose any need or desire to change the wavelength of laser 65 during use.

In contrast, Virtanen, at paragraph [0164], states, "[i]nformation is recorded by a recording laser of appropriate preselected wavelength that selectively melts 'pits' into the dye layer—rather than burning holes in the dye, it simply melts it slightly, causing it to become non-translucent so that the reading laser beam is refracted rather than reflected back to the reader's sensors, as by a physical pit in the standard pressed CD," (emphasis added).

Accordingly, Virtanen merely discloses a recording laser and a reading laser. Even assuming that Virtanen's recording laser beam could have a wavelength different from that of Virtanen's reading laser beam, one of ordinary skill in the art would not combine Virtanen and Sheppard in the manner alleged by the Examiner. As discussed above, Sheppard prefers a *monochromatic* light source, and Virtanen's recording and

reading laser beams have *different* wavelengths. Accordingly, Virtanen teaches away from Sheppard and thus cannot be combined with Sheppard.

In view of the above, the Examiner's rejection of claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Sheppard in view of Virtanen is improper and thus should be withdrawn.

In view of the foregoing remarks, Applicant respectfully requests reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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